

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 163464

Tuesday, June 27, 2017 1:15:29 PM

163464

Page 2

Item ID: D4436-045 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Aft Inboard Bracket Assembly
Start Date: 6/27/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 7/4/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.08				<u>4</u>			DAS 38 JUL 26 2017
130 *130* Brake NC Brake NC	Bend as per dwg Memo	0.12 0.57			DAS 30 9-89	<u>4</u>			JUL 10 2017
140 *140* Small Fab Small Fab	Memo 1- Transfer drill holes as per dwg. 2-C"SINK AS PER DWG 3-TRANSFER 0.129 HOLES THRU (2 PLACES)	0.00 0.27			DAS 30 9-89	<u>4</u>	<u>Ø</u>		JUL 10 2017 DAS 19 9-89

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Work Order ID 163464

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163464

Page 4

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Revision ID: Stop ***NS2***
Item Name: Aft Inboard Bracket Assembly
Start Date: 6/27/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 7/4/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180		0.00							
180						42			17/07/12
Small Fab	Memo	0.59							
Small Fab	Assemble as per dwg, do not install grommets and rubber seal.								
185	QC5- Inspect part completeness to step on W/O	0.00				4			
185									
QC	Memo	0.08							
Quality Control									JUL 12 2017
190	Black Sandtex (Ref 4.3.5.7) per QSI005 4.3	0.00							
190	11136570-								
Powdercoat	Memo	0.40							
Powder Coating									

START: 11:35.
O.V.T: 320"
FINISH: 12:05.

H 0 17-07-12. 838

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200 *200* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.04				4			DAS 38 9-89 JUL 12 2017
202 *202* Small Fab Small Fab	Memo Cut qty 1 to 3.8" Cut qty 1 to 10.00" Install rubber seals and grommets, as per dwg	0.00 0.66				4	Ø		DAS 19 9-89 NLL 17-7-13
205 *205* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.08				4			DAS 38 9-89 JUL 13 2017

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163464

Page 6

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Start Date: 6/27/2017 Start Qty: 4.00 ***4*** Cust Item ID:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	Identify as per dwg & Stock Location: <u>St620</u>	0.00							
210									
Packaging	Memo	0.04							
Packaging									
220	QC21- Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.40							
Quality Control									

Handwritten notes and stamps:
- Blue stamp: JUL 17 2017
- Blue stamp: DAS 6 9-89
- Blue stamp: 17/7/20
- Blue stamp: DAS 21 9-89
- Blue stamp: JUL 18 2017

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OTHER : ☐																																																																								

Picklist Print

Tuesday, June 27, 2017 1:15:32 PM

Page 1

Work Order ID: 163464

163464

Parent Item: D4436-045

D4436-045

Parent Item Name: Aft Inboard Bracket Assembly

Start Date: 6/27/2017

Required Date: 7/4/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP revA 11.10.06 new issue EC verified by:DD IPP RevB
11.12.22 per PA2 EC verified by:JLM IPP REV:C 12.01.24
PER DWG REV.A DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

MS35489-19		Purchased	No			202	Each	4.0000	1	4			
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MS35489-19

**

Grommet

Location	Loc Qty	Loc Code
----------	---------	----------

GA	4	
----	---	--

m136787	4	
--------------------	---	--

M6061T6S.040	Purchased	No			100	SI	131.6100	0.689	2.901053				
--------------	-----------	----	--	--	-----	----	----------	-------	----------	--	--	--	--

M6061T6S 040

**

6061-T6 .040 Sheet

Location	Loc Qty	Loc Code
----------	---------	----------

MAT	34	
-----	----	--

m137165	34	
---------	----	--

MAT021	97.61	
--------	-------	--

m135612	8.35	
---------	------	--

m135632	3.51	
---------	------	--

m136790	16.2	
---------	------	--

m137518	69.55	
---------	-------	--

D4441-1	Manufactured	No			202	f	268.0512	1.15	4.6				
---------	--------------	----	--	--	-----	---	----------	------	-----	--	--	--	--

D4441-1

**

Rubber Seal

Location	Loc Qty	Loc Code
----------	---------	----------

ST422	22.2392	
-------	---------	--

151347	22.2392	
--------	---------	--

ST625	245.812	
-------	---------	--

151347	245.812	
--------	---------	--

4.6
~~3.1~~

17-7-13 MLL

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																		
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																		
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																		
Large Fab ☐	Composite ☐	Supplier ☐																			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval																	
Description Work Order Deviation		Disposition																			
				Completed By																	
				Lead hand / Supervisor Approval Verification																	
				QC / QA Coordinator Approval																	
<table style="width:100%; border: none;"> <tr> <td colspan="2" style="text-align: center; border: none;">Root Cause</td> <td colspan="3" style="text-align: center; border: none;">FAULT CATEGORY</td> </tr> <tr> <td style="border: none; vertical-align: top;"> Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ </td> <td style="border: none; vertical-align: top;"> No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ </td> <td style="border: none; vertical-align: top;"> Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ </td> <td style="border: none; vertical-align: top;"> Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ </td> <td style="border: none; vertical-align: top;"> Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ </td> <td style="border: none; vertical-align: top;"> Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐ </td> </tr> </table>					Root Cause		FAULT CATEGORY			Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐						
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OTHER : _____																					

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Tuesday, June 27, 2017 1:15:32 PM

Page 2

Work Order ID: 163464

163464

Parent Item: D4436-045

D4436-045

Parent Item Name: Aft Inboard Bracket Assembly

Start Date: 6/27/2017

Required Date: 7/4/2017

Start Qty: 4.00

Required Qty: 4.00

MS20426AD3-2

Purchased

No

180

Each

18,145.00

4

16

MS20426AD3-2

Rivet

**

17/07/12 DAS 36 9-89

Location

Loc Qty

Loc Code

Mezz

18145

1173

8865

13276

9280

135274 16x

MS20470AD4-3

Purchased

No

180

Each

1,595.000

2

8

MS20470AD4-3

Rivet, Universal Head

**

17/07/12 DAS 36 9-89

Location

Loc Qty

Loc Code

GA

840

2193

87

m135536

753

ST310

755

m135536

755

8

MS21075L08

Purchased

No

180

Each

177.0000

2

8

MS21075L08

ANCHOR NUT

**

17/07/12 DAS 36 9-89

Location

Loc Qty

Loc Code

ST298

177

M135774

102

M137597

75

128429 8x

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

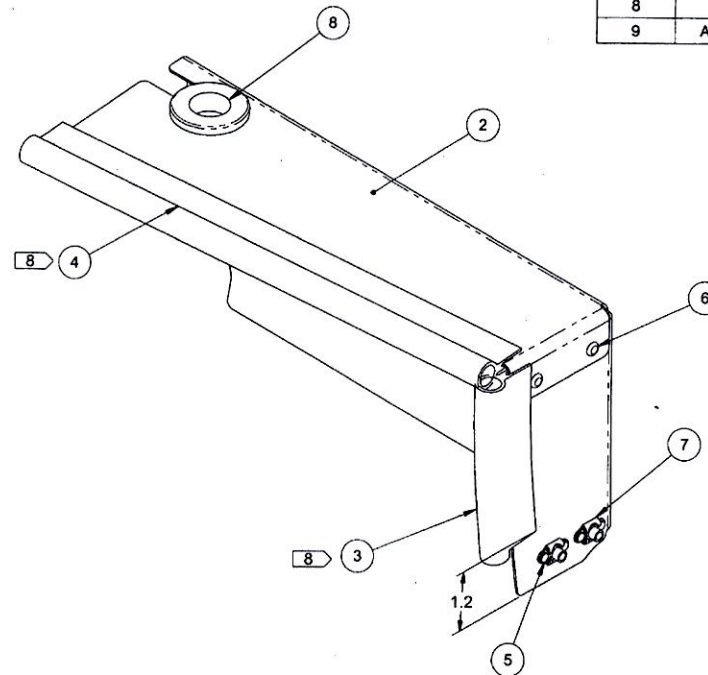
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

FIRST ARTICLE INSPECTION CHECKLIST

Measured by:		Audited by:		Preliminary Approval:	
Date:		Date:		Date:	
17/07/06		JUL 06 2017			

Rev	Date	Change	Revised by	Approved
A	15.10.14	New Issue	KJ	

ITEM	QTY 045	PART NUMBER	DESCRIPTION
1	X	D4436-045	AFT INBOARD BRACKET ASSEMBLY
2	1	D4436-3	BRACKET
3	1	D4441-1-038	RUBBER SEAL
4	1	D4441-1-100	RUBBER SEAL
5	4	MS20426AD3-2	RIVET
6	2	MS20470AD4-3	RIVET
7	2	MS21075L08	NUT PLATE
8	1	MS35489-19	GROMMET
9	A/R	3M 1300/1300L	ADHESIVE



D4436-045 AFT INBOARD BRACKET ASSEMBLY

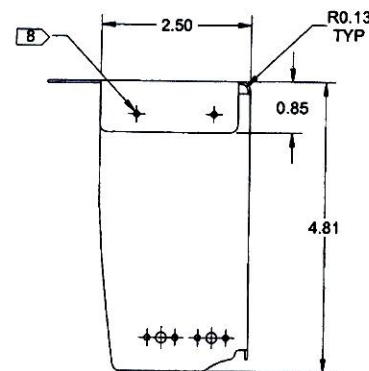
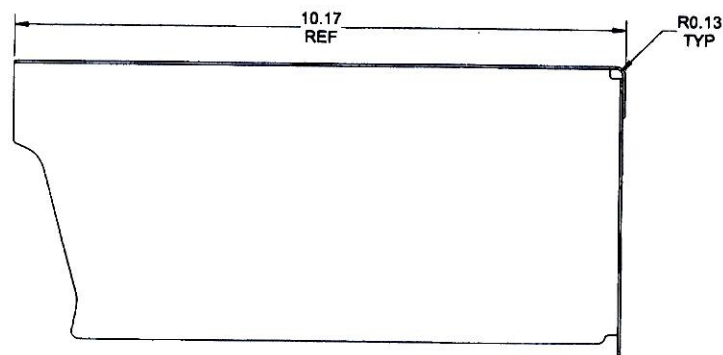
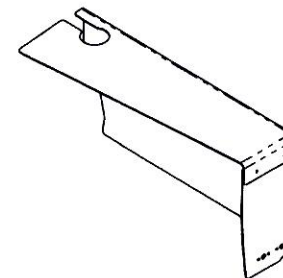
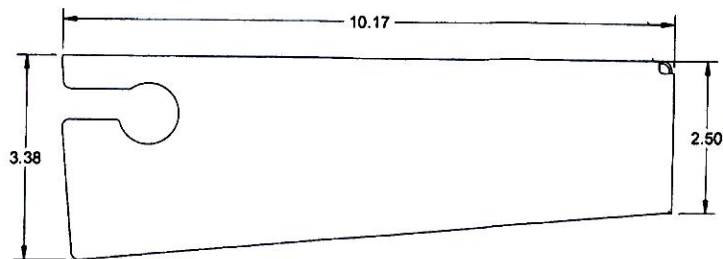
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT "BLACK SANDTEX" (4.3.5.7) PER DART QSI 005 4.3
MASK NUT PLATE HOLES
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.42 lbs
- 8) INSTALL RUBBER SEAL TO EDGE OF PART AFTER POWDER COAT USING 3M 1300/1300L ADHESIVE,
ENSURE BRACKET IS COMPLETELY INSERTED INTO GROOVE OF RUBBER SEAL.
IT IS ACCEPTABLE TO NOTCH THE SEAL AS REQUIRED TO PREVENT IT FROM BUCKLING

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 163464MCS
170628

RELEASED
2012-01-23
MP

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4436	SHEET 3 OF 7
APPROVED		TITLE	SCALE
DE APPR.		COVER ASSEMBLY	NTS
DATE	12.01.17	COPYRIGHT © 2012 BY DART AEROSPACE LTD	
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D4436-3 BRACKET

NOTES:

- 1) MATERIAL: MAKE FROM D4436-3F FLAT PATTERN
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.33 lbs
- 8) TRANSFER $\varnothing 0.129$ HOLES THRU 2 PLACES

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO. D4436	REV. A
MFG. APPR.	<i>[Signature]</i>	SHEET 6 OF 7	
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	COVER ASSEMBLY	NTS
DATE	12.01.17	COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

RELEASE
11 2012-01-23
[Signature]

